



Centers for Disease Control and Prevention
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Asthma Prevention Program of the National Center for Environmental Health, Centers for Disease Control and Prevention

At-A-Glance

1999



**Asthma is one of the most common and costly diseases in the
United States.**

**More than 5% of the US population has asthma and the numbers are growing. The need to
respond to this problem is increasingly urgent.**

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Scope of Problem

Asthma currently cannot be cured, only controlled. Asthma is a long-term, often progressive disease in which the airways become temporarily blocked. Those affected have episodes of breathing difficulty when their airways become inflamed, and they are more sensitive to a variety of "triggers" for breathing problems. These triggers include dust, tobacco smoke, cockroaches, and some chemicals. A long-term, multifaceted approach is required to prevent and manage asthma. This includes educating, treating, and providing continual medical care and monitoring for people who have asthma; changing behaviors that lead to asthma or worsening of asthma; and eliminating or avoiding asthma triggers.

Asthma's Impact is Large. The number of asthma sufferers has more than doubled from 6.7 million in 1980 to 17.3 million in 1998. An estimated 4.8 million are children. Asthma is hitting hardest and disproportionately among poor, inner-city dwellers. Collectively, people who have asthma experience well over 100 million days of restricted activity each year, and asthma is believed to be the most common reason that students miss school. In 1995, more than 5,000 Americans died from asthma.



(Click to see graph of asthma prevalence)

Asthma's Costs Are Large. Asthma accounts for nearly 500,000 hospitalizations each year. Asthma deaths have tripled over the past two decades. Despite improvements in clinical treatment, visits to emergency rooms and hospitalizations due to asthma are increasing. It is estimated that by the year 2000, asthma-related costs will exceed \$14.5 billion.



(Click to see graph of costs)

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CDC's Asthma Prevention Program

The National Center for Environmental Health of the Centers for Disease Control and

Prevention (CDC) is leading CDC's efforts to prevent and control asthma in partnership with state and local health departments. This program includes (1) using surveillance data to target resources and evaluate prevention efforts; (2) educating health care providers, school personnel, and people who have asthma and their families about asthma; (3) building partnerships to conduct local initiatives for controlling asthma; and (4) conducting research to increase understanding of asthma and identify new strategies to control it. An important part of controlling asthma is to stop people who have asthma from coming into contact with things in the indoor and outdoor environments that trigger asthma. This means modifying the environment to remove or reduce triggers.

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Benefits of Preventing and Managing Asthma

When existing asthma is controlled through better use of available knowledge and technology, individuals and society benefit in numerous ways.

Decreased emergency room visits and hospitalizations. Better asthma management could reverse the increasing numbers of emergency room visits and hospitalizations due to asthma. Use of emergency facilities for asthma attacks is an indication that people are not adequately controlling their asthma and need quality, *routine* medical care and instruction.

Increased school and work attendance. Asthma is the single largest reason children miss school. And it is not only the children who must stay home—their parents must take time off to care for them. In addition, asthma accounts for an estimated 3 million lost workdays annually for workers over 18 years of age who have asthma themselves, according to the American Lung Association. Better control of asthma will increase our nation's productivity.

Healthier environment. Air pollution and tobacco smoke can aggravate asthma symptoms. If we reduce exposure to "trigger" substances such as these, not only will people who have asthma benefit, but everyone else will as well.

Improved quality of life. If not managed properly, asthma can cause coughing, wheezing, inability to breathe, and even death. But it doesn't have to be that way. If people who have asthma receive proper, ongoing medical treatment; come into less contact with triggers; and have a clear asthma management plan, they, instead of asthma, can be in control of their lives.

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Barriers To Preventing and Managing Asthma

There are a number of barriers to preventing and managing asthma

Missed diagnosis. There is anecdotal evidence that not enough primary health care providers are using the clinical guidelines for diagnosing asthma that were issued by an expert panel of the National Asthma Education and Prevention Program (National Heart, Lung and Blood Institute of the National Institutes of Health). These guidelines provide a means of interpreting what is and isn't asthma. Not using these guidelines may lead to misdiagnosis of asthma, for example, as a temporary respiratory infection.

Behavior change constraints. The lifestyle changes needed to control asthma in indoor environments are time-consuming. Controlling or eliminating exposure to tobacco smoke, dust mites, cockroaches, pet dander, mold, and other indoor triggers requires a significant commitment from an asthma sufferer's entire family, schools, and businesses to be effective.

Limited or no access to primary care. Not everyone has access to medical treatment, especially ongoing preventive treatment. Some of the poorest inner city children who have severe asthma do not receive the routine primary care that could reduce asthma's impact on their lives.

Embarrassment. Many children feel different because they have asthma. They may be hesitant to use inhalers and feel ostracized if their asthma causes them to miss gym classes or other activities. Adults may be embarrassed to tell their coworkers that they have asthma or to use inhalers on the job.

Misinformation and stereotypes. Misconceptions such as "People who have asthma are weak," or "It is bad for people to use so much medicine" may inhibit people from managing their asthma. Some school districts' "no drugs" policies are inappropriately applied to prescription medication, including asthma inhalers.

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Strategies for Preventing and Managing Asthma

Surveillance. Public health professionals use surveillance—the ongoing collection, analysis, and interpretation of outcome-specific data—to plan, carry out, and evaluate activities for protecting public health. In collaboration with the National Heart, Lung, and Blood Institute and the US Environmental Protection Agency's Office of Children's Health, CDC has funded four state health agencies and two local health agencies to develop model asthma surveillance programs. This project is the first step in building state- and local-based asthma surveillance programs nationwide.



(Click here for map highlighting the states with CDC-funded asthma projects)

Tracking and studying asthma cases and severe episodes (e.g., hospitalizations and emergency room visits due to asthma) can help us understand how many people have asthma, who is at high risk, who has more severe asthma, and if any of these measures change over time. Surveillance is essential for understanding the extent of the problem, knowing how to address the problem, and assessing the success of intervention efforts.

Most of what is currently known about asthma distribution, severity, and changes in occurrence over time is based on surveys of the national population or mortality data. Little is known about patterns of asthma occurrence in state or local areas.

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National asthma partnerships and outreach. CDC understands the importance of educational and outreach efforts for preventing asthma and improving the quality of life of those already suffering with it. A successful national campaign to reduce asthma incidence and better control existing cases would be impossible without the active involvement of a coalition of committed partners.

There is already a common forum. Agencies and organizations share materials and information related to asthma control through the National Asthma Education and Prevention Program. CDC is an active member of this national program and uses its clinical practice guidelines in developing educational materials for various audiences.

CDC and the American Lung Association are currently identifying asthma-related activities they might jointly sponsor. Opportunities include developing standardized asthma education programs; recommending legislative actions that benefit people who have asthma (e.g., letting children carry asthma medication on themselves at school and third party payment for asthma education); and making indoor environments more "friendly" for people with asthma. CDC actively promotes American Lung Association education programs such as "Open Airways for Schools" among its state and local health professional partners.

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State and local asthma partnerships and outreach

CDC is working with state and local partners to implement and evaluate the success of comprehensive asthma prevention programs. These programs monitor communities to identify local disease trends; conduct asthma prevention activities; conduct intervention and evaluation research; and educate health care practitioners, people who have asthma, and community organizations about asthma.

Projects cosponsored by CDC and its state and local partners include the following:

1. *The California Community-Based Asthma Intervention Demonstrations Project* (Fresno, CA): The goal of this project is to study whether reducing exposure to secondhand tobacco smoke reduces hospitalization of children due to asthma-related

problems.

2. *The Wisconsin Community-Based Asthma Intervention Project* (Madison, WI): The goal of this project is to reduce exposure of children who have asthma to indoor allergens and document any reduction in asthma-related problems. CDC's partners are the Wisconsin Department of Health and Social Services; the American Lung Association of Wisconsin; Fight Asthma Milwaukee; and the Medical College of Wisconsin.

3. *Investigation of Characteristics and Circumstances Surrounding Asthma Deaths* (New York, NY): In this study, CDC and the New York City Department of Health are reviewing medical examiner cases of death due to asthma to help identify and understand factors that may be causing an increase in asthma death rates in this population. Death rates from asthma among 25- to 45-year-old adults are substantially higher in New York City than in other metropolitan areas and the nation as a whole.

4. *Wisconsin Asthma Education for Welfare-to-Work Project* (Milwaukee, WI): The Wisconsin Department of Health and Social Services (DHSS) will develop and pilot an asthma education and management program for Milwaukee area families enrolled in Wisconsin Works (the Wisconsin welfare-to-work program). DHSS will provide families with information about asthma in general, indoor and outdoor allergens, and tools for treating and monitoring asthma (e.g., metered dose inhalers and peak flow meters).

5. *ZAP Asthma Project* (Atlanta, GA): CDC and 16 public, private, and community organizations formed ZAP Asthma, Incorporated, a community-based coalition to improve the lives and health of children who have asthma. The goal of the ZAP Asthma program is to determine if reducing exposure to known triggers in the home and educating families about asthma will decrease the number of asthma attacks and the costs associated with treating and managing asthma. The project is being pioneered with children 5 to 12 years old living in Atlanta's Empowerment Zone, a cluster of inner-city, low-income neighborhoods with a high rate of asthma among children.

6. *CDC/Health Department Interaction* (all states and territories): To build capacity in preventing and managing asthma, CDC provides staff of state, local, and territorial health agencies with training and networking opportunities. In collaboration with its national partners, CDC currently provides funding to six state and city health agencies for evaluating their asthma surveillance efforts. Based on the results, the partners will make recommendations to others about effective approaches to asthma surveillance.

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What More Can Be Done?

Controlling asthma as a public health problem will require a variety of initiatives.

Surveillance. State surveillance activities will help define asthma prevalence and

severity. CDC has developed asthma-related questions for its 1999 Behavioral Risk Factor Surveillance System survey for use by states. These questions will help determine which groups of people are engaging in behaviors that may increase their risk of asthma-related problems and who is most at risk. States and others can use this data to target intervention programs to those who need them the most, refine programs so that they are more effective, and evaluate the progress and results of programs.

Education. People who have asthma, their families, health care providers, school administrators, teachers, coaches, and community partners need to learn more about how to prevent and manage asthma. Professional and community educators can help reduce the economic and personal burdens of asthma by sharing information about asthma triggers and diagnosis and treatment options. If funded, CDC could provide initial and continuing training for staff of state and local health agencies to ensure ongoing professional development in preventing and managing asthma.

Partnerships. For asthma prevention and control activities to flourish, dedicated partners in government agencies, nonprofit groups, and the private sector, including health maintenance organizations and hospitals, must coordinate their efforts. They can also work together on appropriate legislation related to asthma control, such as legislation allowing better access to asthma medication in drug-free schools or third party payment for asthma education.

Research. To further reduce asthma-related illness and costs, an applied research program is needed to refine and develop strategies for preventing and controlling asthma. To separate asthma causes from asthma triggers, accurate measures of asthma incidence need to be developed. To provide a basis for policies that offer the greatest benefit for available resources, the factors that make an asthma prevention program more effective need to be better understood.

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